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T-D

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/452,930 | 12/02/99 | RADZIO | C 79189CEB |

001333
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IM52/0808

EXAMINER
HECKENBERG JR, D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1722 | H |

DATE MAILED: 08/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

| | | |
|------------------------------|-------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/452,930 | RADZIO ET AL. |
| | Examiner Donald Heckenberg | Art Unit 1722 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-10 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1.) Certified copies of the priority documents have been received.
 2.) Certified copies of the priority documents have been received in Application No. ____.
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The disclosure is objected to because of the following informalities: The reference to the co-pending applications at the beginning of the specification should include the serial numbers of the applications. Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto et al. (US 5,350,288) in view of Nomura et al. (US 5,156,754).

Kimoto et al. teach an injection molding apparatus comprising a screw cylinder (4) having a tip, a nozzle (9) at the tip, and a thread-screw (3) advanceable in the screw cylinder for injecting the resin from the nozzle, the mold also comprising a cavity mold (33) and a core mold (34) forming a hollow (42) therebetween for forming an injected molded product therein, a first molten resin flow path (39 and 42) extending from inside the screw cylinder to a terminal end of the hollow,

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and a pressure relief valve (40) located on the resin flow path at the terminal end of the hollow. Kimoto et al. teach the pressure relief valve to comprise a movable pin actuated by a spring bias (50), the movable pin (48) being adapted for movement between a first position blocking the resin when the pressure is less than a predetermined value, and to a second position releasing the resin into a second molten resin flow path in fluid communication with the first resin flow path thereby relieving pressure in the first path (col. 5, ln. 55 - col. 6, ln. 5). Kimoto et al. further teach the mold to comprise stationary and movable portions for accessing the cavity along a parting line (51), the parting line having the second resin path formed therein and as such allowing for hardened resin in the second path to be removed from the cavity with the molded part (see fig. 12).

Kimoto et al. fail to teach the injection mold to be made from cast epoxy and thermo-set materials.

Nomura et al. teaches the making of injection molds form cast-epoxy and thermosetting materials because of the ease of which the molds may be made (col. 1, lns. 17-24).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have modified the apparatus of Kimoto et al. as such to have made the mold

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from cast-epoxy and thermosetting material because it would be easy to construct the mold from these materials as suggested by Nomura et al.

6. Claims 2, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto et al. modified by Nomura et al. as applied to claims 1, 3-7, and 10 above, and further in view of Valyi (US 3,670,066) and Gardner (US 4,342,717).

Kimoto et al. and Nomura et al. disclose the apparatus as described above. Kimoto et al. and Nomura et al. fail to teach the relief valve to be adjustable for accommodating resin with different pressure and flow characteristics, with the valve being adjusted by a threaded screw supporting the spring bias biasing the movable pin.

Valyi teaches an injection molding apparatus wherein a relief path (35) is created with using a spring biased valve (36) wherein the spring bias (24) is held by a threaded screw (26).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have modified the apparatus of Kimoto et al. and Nomura et al. as such to have used a threaded screw arrangement to support the spring bias because this is a suitable arrangement for the construction of a

relief valve as taught by Valyi and further because this would allow for adjustment of the spring bias acting on the valve. It is further noted that generally the provision apparatus adjustability, where needed, is seen as an unpatentable advance. See *In re Stevens*, 101 USPQ 284 (CCPA 1954). The reference Gardner is cited as further showing that the provision of making pressure relief valves adjustable is known in the art, as Gardner teaches a relief valve structure (26) with a spring bias (25), the valve being adjustable to accommodate different molding conditions (see col. 3, lns. 25-32).

7. The following references are cited of interest:

Grendol (US 4,540,534) is cited as teaching an example of a pressure relief valve (110) used in injection molding.

Furukawa et al. (US 5,147,658) is cited as teaching another example of a pressure relief valve (8) known in the injection molding art.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Heckenberg whose telephone number is (703) 308-6371. The

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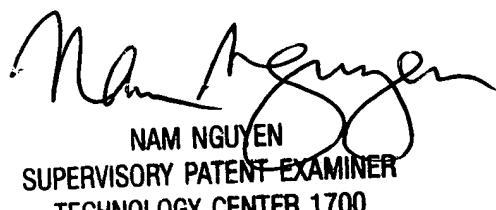
examiner can normally be reached on Monday through Friday from 9:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached at (703) 308-3322. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718, and the unofficial fax phone number is (703) 305-3602.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Donald Heckenberg
August 2, 2001



NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700